

Application No. 10/609,170
Amdt. Dated May 10, 2006
Reply to Notice of May 4, 2006

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Amendment to the Specification:

1. On page 2, please amend the first paragraph to:

The limited prior art which exists in the present area is reflected in U.S. Patent No. 4,433,522 (1984) to Yerushalmi, entitled Blast And Fragment-Resistant Protected Wall Structure; No. 5,117,600 (1992) also to Yerushalmi, entitled Building Structure Having High Blast and Penetration Resistance; and ~~No. 6,224,473~~ No. 6,223,473 (2001) to Romig, entitled Explosion Relief System Including Explosion Relief Panel. Said reference to Yerushalmi '600 is the most directly known precursor to the instant invention. Therein, a filling material such as loose sand, gravel, pebbles or stones is interposed between opposing concrete panels to form a basic barrier structure. The instant system therefore builds upon the invention of Yerushalmi '600 in its provision of a more economic, modular and flexible system of blast barrier protection.

2. On page 6, please amend the first paragraph to:

With reference to the perspective view of Fig. 1, the present inventive blast protective barrier system is definable with reference to an x, y, z coordinate system (which is shown to the lower right of Fig. 1). Therein, the subject system may be seen to include a plurality of substantially ground level (xy plane) pile caps 10, each comprising a x-axis elongate length (see also Figs. 2 and 3), a y-axis width and a z-axis height. The length of each pile cap 10 substantially defines the width of the inventive system within the x-axis. As may be particularly noted, each pile cap 10 includes upper and lower xy plane surfaces 12 and 14 respectively. Said upper xy plane surfaces 12 exhibit y-axis channels, or grooves 16 into which concrete panels 18 and 20 (described below) are secured at between 5 and 15% of the height thereof. Within lower xy plane 14 of pile cap 10 are provided a plurality (preferably three) of recesses 22 into which are secured a corresponding plurality of piles 24. In a preferred embodiment, a center pile 26 is aligned with the z-axis or gravity vector,

Application No. 10/609,170
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while left and right piles 28 and 30 respectively are offset from the z-axis by an angulation falling in a range of about 15 to about 30 degrees.

3. On page 8, please amend the last paragraph to:

It should be further appreciated that certain other salient dimensional relations exist in the above-described system. Therein, a xz plane of each pile cap 10 in cross-sections of panels 18/20 define a ratio of x-axis pile cap dimension to separation of an opposing panel in a range of about ~~1.5:1~~ 2.5:1 to about ~~2.5:1~~ 5:1, in which about 3.5:1 has been found to be preferable. Further, the ~~xy-plane~~ x-axis length of each pile cap defines a ratio of between about 3:1 and about 1:1 relative to the x-axis width of each panel 18/20. It is further noted that in an xz plane of each panel pair, inclusive of said interposed volume of shock absorbent material, total aggregate x-axis dimension of outer surfaces of said panels to said compacted material comprises an x-axis range of between about 2.5:1 and about 1.5:1. Preferably, and particularly for purposes of ease of production, panels 18 and 20 will be identical ~~[[and]]~~ in width and other respects. It is further noted that a x-axis depth of lower ends 50 (see Fig. 2) which are within said pile cap channels 16 will comprise a ratio in a range of about 0.05 to about 0.15 of the entire z-axis height of the panels 18/20, in which the ratio 0.07 is preferable.

4. On page 9, please amend the first paragraph to:

The depth of piles 24 within earth 32 will typically be within a range of about 10 to about 50 feet in which the separation of the tops 52 of each pile within said recesses of the pile cap may define an aggregate length of about 10 feet. As may be noted in Fig. 6, a ratio of ~~pile-cap~~ column 38 x-axis length to y-axis width will define a range between about 3.5:1 and 2.2:1. As may be noted in Figs. ~~[[4]]~~ 5 and 6, the y-axis width of column 38 will typically slightly exceed the x-axis width of panels 18/20.

Application No. 10/609,170
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5. On page 9, please amend the third paragraph to:

It has been also determined that the ratio of z-axis height of each panel 18/20 to the x-axis length of each pile cap 10 may be approximately equal but, more particularly, will reflect a range of about 0.7:1 to about 1.2:1. Thereby, the foundation of the instant structure, in combination with the above-described ~~pilings~~ piles 24 will afford enormous lateral stability to the present structure in the event of an explosive attack or a direct armored assault by a tank, tank artillery or other state of the art ground-to-ground artillery. The structure will of course also provide a defensive perimeter in the event that security personnel are available at the time of such attack.

6. On page 9, please amend the last paragraph to:

As above noted (see Fig. 2), the angulation of outer legs piles 28 and 30 relative to center legs piles 26 will generally fall within a virtual cylinder defined by the greatest x-axis dimension of pile cap 22. However, where earth 32 is not sufficiently stable or if it is not feasible to dig deeply into the earth, the ~~angulation~~ angulation of the outer legs piles relative to the center leg pile 26 may be increased substantially, as may the number of pile provided beneath each pile cap.

7. On page 10, please amend the seventh paragraph to:

5. Pour concrete connector wall between surfaces of wall panels on top of pile caps at each pile cap location. Use shape of a letter "I" to connect to both wall panels and foundation.

8. On page 10, please amend the eighth paragraph to:

7. Fill the space between the wall panels 18/20 with loose sand or selected fill material to absorb impact.

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9. On page 10, please amend the last paragraph to:

8. Connect the top of the ~~walls~~ wall panels with the concrete slab with cast-in-place or pre-cast concrete panels to act as twin wall on one unit on top of the ~~walls~~ wall panels.